DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027561
Date Inspected: 07-May-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name: Fred Von Hoff and Steve Mc Conkey

CWI Present:	☑ Yes	☐ No					
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS Tower

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower Base 13 meter outer East external diaphragm, QA randomly observed ABF/JV qualified welder James Zhen perform Partial Joint Penetration (PJP) T-joint welding fill pass on 80mm thick shear plate to 45mm thick diaphragm plate weld joint #W102. The welder was observed welding in the 2G (horizontal) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16” diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. The welder was using a track mounted welder holder assembly that was remotely controlled. The PJP T- joint was preheated to greater than 325 degrees Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blankets located on top of the plate prior welding. During welding, ABF Quality Control (QC) Fred Von Hoff was noted monitoring the welding parameters of the welder. Measured welding parameters during welding were 230 amperes, 23 volts and 330mm travel speed. Calculated heat input was 0.961 Kjoules/mm which appears in compliance to the contract requirements. At the end of the shift, FCAW-G fill pass welding was still continuing and should remain tomorrow. The welder held the preheat using the same Miller Proheat 35 Heating System for three hours after welding as required.

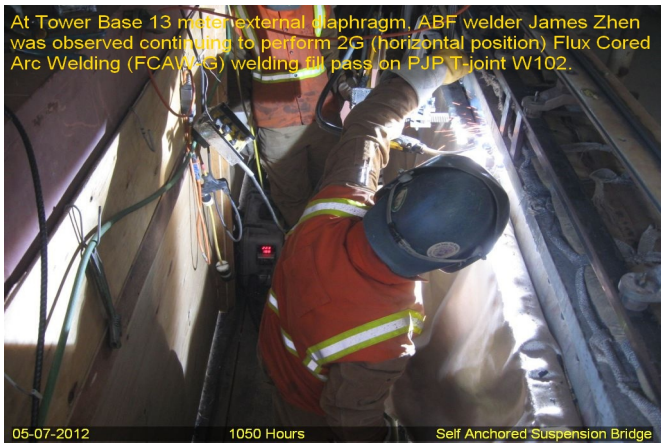
At Tower Base outer West bearing plate, ABF welder Jeremy Dolman was observed continuing to perform 3G (vertical position) dual shielded Flux Cored Arc Welding (FCAW-G) welding fill pass on 60mm thick stiffener plate shop marked P157 and weld joint #W005. The welder was noted using FCAW-G with E71T-1M, 1/16”

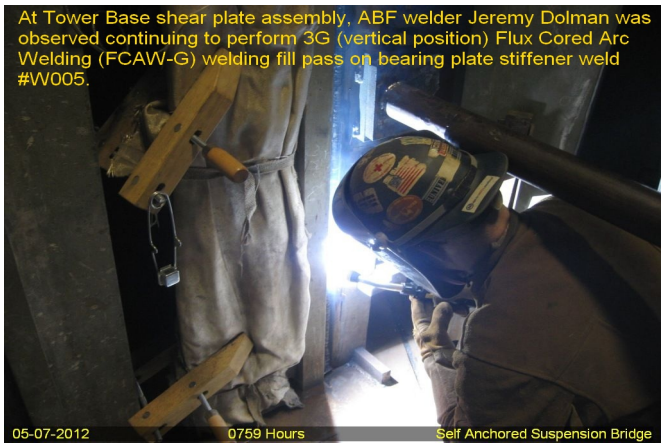
diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15- 3160-3. The 60mm thick stiffener has a 45 degree single bevel configured for a Partial Joint Penetration (PJP). The stiffener plate is being PJP welded to the 60 mm bearing plate. The plates were preheated to more than 225°F using the Miller Proheat 35 Induction heating System. This QA Inspector observed QC Inspector Steve Mc Connell using a Fluke infra red temperature gauge to verify the preheat temperature of more than 225°F. At the end of the shift, fill pass welding was still continuing and should remain tomorrow.

At Tower Base Electro Slag Weld (ESW) weld joint E-045 location 'F' face 'A', QA randomly observed ABF/JV qualified welder Rory Hogan continuing to perform CJP groove welding repair. The welder was observed welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1000-Repairs. The repair excavation of 230mm long X 35mm wide X 42mm deep located at Y axis +7600mm was preheated to more than 300 degree Fahrenheit using propane gas torch prior welding. The ESW weld joint mentioned above is being repaired per Caltrans approved Request for Weld Repair (RWR) #201205-002 dated May 2, 2012. During the shift, ABF QC Sal Merino was noted monitoring the welder. Measured welding parameter during welding was 140 amperes on the 3.2mm E7018H4R electrode. The welder continued welding the repair until the end of the shift wherein he was not able to complete. Repair welding should remain tomorrow.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the fillet welding of two (2) corner stiffener joints. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector at 9 meter diaphragm meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. 13 meter diaphragm corner stiffener W138-5 fillet weld joint – weld cover QA verified
2. 13 meter diaphragm corner stiffener W137-4 fillet weld joint – weld cover QA verified





WELDING INSPECTION REPORT

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Summary of Conversations:

No significant conversation ocurrred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer